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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

NGUYEN, CHAU N

ART UNIT	PAPER NUMBER
2831	

DATE MAILED: 11/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/518,468	Applicant(s) BELLI ET AL.	
	Examiner Chau N. Nguyen	Art Unit 2831	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 45-88 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 45-88 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 December 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) * | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) *
Paper No(s)/Mail Date <u>12/22/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C.

112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 45-75 and 83 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 45, lines 4-6, the recitation of "a protective element around said insulating layer having a thickness and mechanical.....capability" is unclear to which one, the protective element or the insulating layer, having a thickness.

Claim 45, line 8, "said insulating layer thickness" lacks antecedent basis.

Claim 45, line 9, "the cable insulating layer" lacks antecedent basis.

Claim 45, line 10, "said protective element thickness" lacks antecedent basis.

Claim 51, lines 1-3, the phrase "said insulating layer thickness being at least 20% smaller than the insulating layer thickness provided for in IEC Standard 60502-2 for the corresponding voltage class" is vague since the Standard is changed periodically.

Claim 72, lines 1-2, "said further expanded polymeric layer" lacks antecedent basis.

Claim 83, lines 2-3, "one non-expanded polymeric layer of said non-expanded polymeric layers" is unclear.

Claims 46-50, 52-71, and 73-75 are included in this rejection because of dependency.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the feature of "a group of cables selected for a predetermined voltage class and having different conductor cross-sectional areas" as claimed in claim 80 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the

application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 45-51, 55, 57-62, 64-66, 73, 75, 84-86 and 88 are rejected under 35 U.S.C. 102(b) as being anticipated by Belli et al. (WO 98/52197).

Belli et al. (Figure 3) discloses a cable for use in a predetermined voltage class, comprising: a conductor; an insulating layer surrounding said conductor; and a protective element around said insulating layer having a thickness and mechanical properties selected to provide a predetermined impact resistance capability, said protective element comprising at least one expanded polymeric layer (10), and said insulating layer having a thickness. Noted that the insulating layer of Belli et al. would provide a voltage gradient on the outer surface of the cable insulating layer not smaller than 1.0 kV/mm, is operated at a nominal voltage corresponding to the predetermined voltage class ranges among values between 2.5 and 18 kV/mm (re claim 57) and said protective element thickness being sufficient to prevent a detectable insulating layer damage upon impact of at least 25 J energy since they comprise structure and material as claimed (re claims 45-

51). Belli et al. also discloses the protective element being placed in a position radially external to the insulating layer (re claim 58), the degree of expansion of said expanded polymeric layer is between 0.35 and 0.7 (re claim 59), said degree of expansion is between 0.4 and 0.6 (re claim 60), said expanded polymeric layer has a thickness between 1 and 5 mm (re claim 61) the expandable polymeric material of said expanded polymeric layer is selected from polyolefin polymers or copolymers based on ethylene and/or propylene (re claim 62), said protective element further includes at least one non-expanded polymeric layer (6) coupled with said expanded polymeric layer (re claim 64), said at least one non-expanded polymeric layer has a thickness in the range of 0.2 to 1 mm (re claim 65), said at least one non- expanded polymeric layer is made of polyolefin material (re claim 66), the conductor being a metal rod (re claim 73), the predetermined voltage class belongs to a medium or high voltage range (re claim 75).

Claims 84-86 and 88 are method counterparts of claims 45-51.

6. Claims 45-51, 54-56, 58, 61-67, 71-73, 75, 84-86 and 88 are rejected under 35 U.S.C. 102(b) as being anticipated by Belli et al. (WO 99/33070).

Belli et al. (Figure 1) discloses a cable for use in a predetermined voltage class, comprising: a conductor; an insulating layer surrounding said

conductor; and a protective element around said insulating layer having a thickness and mechanical properties selected to provide a predetermined impact resistance capability, said protective element comprising at least one expanded polymeric layer (5), and said insulating layer having a thickness.

Noted that the insulating layer of Belli et al. would provide a voltage gradient on the outer surface of the cable insulating layer not smaller than 1.0 kV/mm and said protective element thickness being sufficient to prevent a detectable insulating layer damage upon impact of at least 25 J energy since they comprise structure and material as claimed (re claims 45-51).

Belli et al. also discloses that said predetermined voltage class is 30KV and said insulating layer thickness is not higher than 5.5 mm (re claim 54), said conductor is a solid rod (re claim 55), an electric shield surrounding said insulating layer, said electric shield comprising a metal sheet shaped in tubular form (re claim 56), said protective element is placed in a position radially external to said insulating layer (re claim 58), said expanded polymeric layer has a thickness between 1 and 5 mm (re claim 61), the expandable polymeric material of said expanded polymeric layer is selected from polyolefin polymers or copolymers based on ethylene and/or propylene (re claim 62), said expanded polymeric material is ethylene copolymers with an ethylenically unsaturated ester in which the quantity of unsaturated ester

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is between 5% and 80% by weight (re claim 63), said protective element further includes at least one non-expanded polymeric layer coupled with said expanded polymeric layer (re claim 64), said at least one non- expanded polymeric layer has a thickness in the range of 0.2 to 1 mm (re claim 65), said at least one non- expanded polymeric layer is made of polyolefin material (re claim 66), said protective element comprises a first non-expanded polymeric layer in a position radially external to said expanded polymeric layer (re claim 67), said further expanded polymeric layer is semiconductive (re claim 71), said further expanded polymeric layer is water swellable (re claim 72), said conductor is a metal rod (re claim 73), said predetermined voltage class belongs to a medium or high voltage range (re claim 75). Claims 84-86 and 88 are method counterparts of claims 45-51.

7. Claims 45-62, 64-70, 74 and 75 are rejected under 35 U.S.C. 102(e) as being anticipated by Balconi et al. (2005/0046073).

The applied reference has a common inventor (Sergio Belli) with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was

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derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Balconi et al. (Figure 1) discloses a cable for use in a predetermined voltage class, comprising: a conductor; an insulating layer surrounding said conductor; and a protective element around said insulating layer having a thickness and mechanical properties selected to provide a predetermined impact resistance capability, said protective element comprising at least one expanded polymeric layer (9), and said insulating layer having a thickness.

Noted that the insulating layer of Belli et al. would provide a voltage gradient on the outer surface of the cable insulating layer not smaller than 1.0 kV/mm and said protective element thickness being sufficient to prevent a detectable insulating layer damage upon impact of at least 25 J energy since they comprise structure and material as claimed (re claims 45-51).

Balconi et al. also discloses that said predetermined voltage class is 10KV and said insulating layer thickness is not higher than 2.5 mm (re claim 52), said predetermined voltage class is 20KV and said insulating layer thickness is not higher than 4 mm (re claim 53), said predetermined voltage class is 30KV and said insulating layer thickness is not higher than 5.5 mm (re claim 54), said conductor is a solid rod (re claim 55), an electric shield surrounding said insulating layer, said electric shield comprising a metal sheet shaped in

tubular form (re claim 56) said insulating layer thickness is selected so that the electrical stress within the insulating layer when the cable is operated at a nominal voltage corresponding to said predetermined voltage class ranges among values between 2.5 and 18 kV/mm (re claim 57), said protective element is placed in a position radially external to said insulating layer (re claim 58), the degree of expansion of said expanded polymeric layer is between 0.35 and 0.7 (re claim 59), said degree of expansion is between 0.4 and 0.6 (re claim 60), said expanded polymeric layer has a thickness between 1 and 5 mm (re claim 61), the expandable polymeric material of said expanded polymeric layer is selected from polyolefin polymers or copolymers based on ethylene and/or propylene (re claim 62), said protective element further includes at least one non-expanded polymeric layer coupled with said expanded polymeric layer (re claim 64), said at least one non- expanded polymeric layer has a thickness in the range of 0.2 to 1 mm (re claim 65), said at least one non- expanded polymeric layer is made of polyolefin material (re claim 66), said protective element comprises a first non-expanded polymeric layer in a position radially external to said expanded polymeric layer (re claim 67), said protective element comprises a second non-expanded polymeric layer in a position radially internal to said expanded polymeric layer (re claim 68), a further expanded polymeric layer

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in a position radially internal to said protective element (re claim 69), said further expanded polymeric layer is in a position radially external to said insulating layer (re claim 70), said insulating layer is made of a non-crosslinked base polymeric material (re claim 74), and said predetermined voltage class belongs to a medium or high voltage range (re claim 75).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 52, 53, and 76-84, 86 and 87 are rejected under 35 U.S.C. 103(a) as being unpatentable over Belli et al. (WO/52197).

Belli et al. discloses the invention substantially as claimed except for the insulating layer having a thickness of not higher than 2.5 mm or not higher than 4 mm, the protective element thickness being smaller than 7.5mm for a conductor cross-sectional area greater than 50 mm² and a thickness of greater than 8.5 mm for a conductor cross-sectional area smaller than or equal to 50 mm², nor the thickness of the protective element being in inverse relationship with the conductor cross-sectional area. However, it would have been obvious to one skilled in the art to choose suitable thickness for the insulating layer and the protective element as well as the cross-sectional area for the conductor of Belli et al. to meet the specific use of the resulting cable since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chau N. Nguyen whose telephone number is 571-272-1980. The examiner can normally be reached on Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on 571-272-2800 ext 31. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read "Chau N Nguyen", with a long, sweeping horizontal stroke extending to the right.

Chau N Nguyen
Primary Examiner
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